ABSTRACT

The present invention discloses a method of generation of antigen presenting cells, comprising:

a. collecting said cells from a subject,

b. activating said collected cells;

c. culturing and optionally expanding ex vivo said activated cells;

d. treating said cultured and optionally expanded cells with DNA hypomethylating agents so that said cells concomitantly express multiple tumor associated antigens.

The cells obtainable according to the method of the present invention, as well as the cellular components thereof whether alone or in combination with said cells, are useful for prevention and treatment of malignancies of different histotype that constitutively express one or more of the multiple tumor associated antigens that are expressed in said cells. Conveniently, said cells and/or cellular components are in the form of a vaccine. Said vaccines are advantageous over the prior art in that as they concomitantly express multiple/all methylation-regulated tumor associated antigens.